What is claimed is:

1. Substantially purified FIV-141 virus, wherein said virus has a genomic nucleic acid sequence corresponding to SEQ ID NO:1.

2. A host cell infected with the virus of claim 1.

3. FIV-141 progeny virus produced in the host cell of claim 2.

4. A whole virus vaccine comprising the FIV-141 virus of claim 1, wherein said virus has been inactivated, and a pharmaceutically acceptable carrier.

5. A substantially purified virus having a genomic nucleic acid sequence which is a degenerate variant of a nucleotide sequence corresponding to SEQ ID NO:1.

6. A substantially purified nucleic acid molecule having a sequence corresponding to SEQ ID NO:1.

7. A substantially purified nucleic acid molecule having a sequence which is a degenerate variant of SEQ ID NO:1.

8. A host cell transfected with the nucleic acid of claim 6.

9. A fixed cell vaccine comprising a host cell infected with the virus of claim 1, or transfected with the nucleic acid molecule of claim 6, wherein said host cell has been fixed, and a pharmaceutically acceptable carrier.

10. An attenuated FIV-141 virus which replicates upon entry into a host cell but which exhibits significantly reduced infectivity to feline T lymphocytes when compared to the wild type FIV-141 virus, wherein said attenuated virus is produced by mutating one or more genes in the FIV-141 genome, which genes are selected from the group consisting of: Vif, MA, ORF(2), ENV, CA, NC, SU, TMf, CT, IN, DU, V3/4, V7/8, and RRE.

11. The attenuated FIV-141 virus of claim 10, wherein the one or more genes are selected from the group consisting of Vif, MA, ORF(2), and ENV.

12. The attenuated FIV-141 virus of claim 10, wherein the one or more genes are selected from the group consisting of Vif, MA, ORF(2), ENV, TMf, V3/4, and IN.

13. The attenuated FIV-141 virus of claim 10, wherein at least two genes in the FIV-141 genome have been mutated.

14. The attenuated FIV-141 virus of claim 13, wherein the ENV gene is mutated and one or more other genes in the FIV-141 genome are mutated.

15. The attenuated FIV-141 virus of claim 14, wherein the one or more other genes are selected from the group consisting of IN, CA, NC, Vif and ORF(2).

16. The attenuated FIV-141 virus of claim 13, wherein the genes to be mutated comprise a combination selected from the group consisting of: (i) MA/TMf; (ii) MA/V3/4; (iii) MA/Vif; and (iv) ENV/IN.

17. The attenuated FIV-141 virus of claim 16, wherein the mutated genes comprise a combination selected from the group consisting of: (i) MA del/TMf del; (ii) MA del/V3/4 del; (iii) MA del/Vif del; and (iv) ENV del/IN del.

18. An attenuated virus which replicates upon entry into a host cell but which exhibits significantly reduced infectivity to feline T lymphocytes when compared to the wild type FIV-141 virus, wherein said attenuated virus is produced by mutating one or more genes in the genome of the virus of claim 5, which genes are selected from the group consisting of: Vif, MA, ORF(2), ENV, CA, NC, SU, TMf, CT, IN, DU, V3/4, V7/8, and RRE.

19. A host cell infected with the attenuated virus of claim 10.

20. An attenuated whole virus vaccine, comprising the virus of claim 10 and a pharmaceutically acceptable carrier.

21. An attenuated host cell vaccine comprising the host cell of claim 19, and a pharmaceutically acceptable carrier.

22. A substantially purified FIV-141 nucleic acid molecule having a nucleotide sequence corresponding to SEQ ID NO:1, but wherein said nucleic acid molecule is mutated in one or more genes selected from the group consisting of Vif, MA, CA, NC, SU, TMf, ORF(2), CT, ENV, Vifn, Vifc, IN, DU, V3/4, V7/8, and RRE, such that when the mutated nucleic acid molecule has been introduced into a host cell, the host cell produces a virus that replicates but that has significantly reduced infectivity in peripheral blood mononuclear cells (PBMCs) relative to wild type FIV-141 virus.

23. The nucleic acid molecule of claim 22, wherein said gene is selected from the group consisting of: MA, Vif, ORF(2), and ENV.

24. The nucleic acid molecule of claim 22, wherein said gene is selected from the group consisting of: MA, Vif, ORF(2), ENV, TMf, V3/4, and IN.

25. The nucleic acid molecule of claim 22, wherein at least two genes in the FIV-141 genome have been mutated.

26. The nucleic acid molecule of claim 25, wherein the ENV gene is mutated and one or more other genes in the FIV-141 genome are mutated.

27. The nucleic acid molecule of claim 26, wherein the one or more other genes are selected from the group consisting of IN, CA, NC, Vif and ORF(2).

28. The nucleic acid molecule of claim 25, wherein the genes to be mutated comprise a combination selected from the group consisting of: (i) MA/TMf; (ii) MA/V3/4; (iii) MA/Vif; and (iv) ENV/IN.

29. The nucleic acid molecule of claim 28, wherein the mutated genes comprise a combination selected from the group consisting of: (i) MA del/TMf del; (ii) MA del/V3/4 del; (iii) MA del/Vif del; and (iv) ENV del/IN del.

30. A substantially purified nucleic acid molecule having a nucleotide sequence which is a degenerate variant of a nucleotide sequence corresponding to SEQ ID NO:1, but wherein said nucleic acid molecule is mutated in one or more genes selected from the group consisting of Vif, MA, CA, NC, SU, TMf, ORF(2), CT, ENV, Vifn, Vifc, IN, DU, V3/4, V7/8, and RRE, such that when the mutated nucleic acid molecule has been introduced into a host cell, the host cell produces a virus that replicates but that has significantly reduced infectivity in peripheral blood mononuclear cells (PBMCs) relative to wild type FIV-141 virus.

31. A host cell transfected with the nucleic acid molecule of claim 22.

32. A vaccine comprising the nucleic acid molecule of claim 22 at a concentration sufficient to induce immunity when administered to a cat, and a pharmaceutically acceptable carrier.

33. A vaccine comprising the nucleic acid molecule of claim 30 at a concentration sufficient to induce immunity when administered to a cat, and a pharmaceutically acceptable carrier.

34. A vaccine comprising the host cell of claim 31, and a pharmaceutically acceptable carrier.

35. The vaccine of claim 34, wherein said host cell has been fixed.

36. A method of making an attenuated lentivirus that replicates in host cells but that has significantly reduced infectivity relative to its wild type counterpart, or a nucleic acid molecule encoding said lentivirus, comprising mutating one or more genes of the lentivirus selected from the group consisting of: MA, CA, NC, DU, ENV, SU, TMf, CT, V3/4, V7/8, Vif, Vifn, Vifc, IN, RRE, and ORF(2).

37. The method of claim 36, wherein the one or more genes are selected from the group consisting of MA, ORF(2), and ENV.

38. The method of claim 36, wherein the one or more genes are selected from the group consisting of: MA, ORF(2), ENV, TMf, V3/4, Vif, and IN.

39. The method of claim 36, wherein at least two genes in the lentivirus genome have been mutated.

40. The method of claim 39, wherein the ENV gene is mutated and one or more other genes in the viral genome genome are mutated.

41. The method of claim 40, wherein the one or more other genes are selected from the group consisting of IN, CA, NC, Vif and ORF(2).

42. The method of claim 39, wherein the genes to be mutated comprise a combination selected from the group consisting of: (i) MA/TMf; (ii) MA/V3/4; (iii) MA/Vif; and (iv) ENV/IN.

43. The method of claim 42, wherein the mutated genes comprise a combination selected from the group consisting of: (i) MA del/TMf del; (ii) MA del/V3/4 del; (iii) MA del/Vif del; and (iv) ENV del/IN del.

44. The method of claim 36, wherein said lentivirus is a strain of FIV.

45. An attenuated lentivirus produced by the method of claim 36.

46. A nucleic acid molecule encoding the attenuated lentivirus of claim 45.

47. A host cell infected with the attenuated lentivirus of claim 45.

48. An attenuated whole virus vaccine, comprising the virus of claim 45, and a pharmaceutically acceptable carrier.

49. An attenuated host cell vaccine, comprising the host cell of claim 47, and a pharmaceutically acceptable carrier.

50. A vaccine comprising the nucleic acid molecule of claim 46 at a concentration sufficient to induce immunity when administered to a mammal, and a pharmaceutically acceptable carrier.

51. A method of producing a nucleic acid molecule suitable for use in a vaccine for lentivirus infection, comprising:

a) reverse transcribing said lentivirus's genomic RNA;

b) cloning the reverse transcript of step (a);

c) mutating one or more genes in the cloned nucleic acid of step (b), wherein said genes are selected from the group consisting of MA, CA, NC, SU, TMf, ORF(2), CT, ENV, V3/4, V7/8, Vif, Vifn, Vifc, IN, DU, and RRE; and

d) cloning the mutated nucleic acid of step (c).

52. The method of claim 51, wherein the mutated molecule, upon introduction into a host cell, produces an attenuated virus that replicates but that has significantly reduced infectivity relative to lentivirus made from the unmutated, wild type nucleic acid.

53. The method of claim 52, wherein said lentivirus is a strain of FIV and said attenuated virus replicates but has significantly reduced infectivity in feline T-lymphocytes relative to FIV made from the unmutated, wild type nucleic acid.

54. The method of claim 51, wherein said gene is selected from the group consisting of: MA, ORF(2), and ENV.

55. The method of claim 51, wherein said gene is selected from the group consisting of: MA, Vif, ORF(2), ENV, TMf, V3/4, and IN.

56. The method of claim 51, wherein at least two genes in the FIV-141 genome have been mutated.

57. The method of claim 56, wherein the ENV gene is mutated and one or more other genes in the FIV-141 genome are mutated.

58. The method of claim 57, wherein the one or more other genes are selected from the group consisting of IN, CA, NC, Vif and ORF(2).

59. The method of claim 56, wherein the genes to be mutated comprise a combination selected from the group consisting of: (i) MA/TMf; (ii) MA/V3/4; (iii) MA/Vif; and (iv) ENV/IN.

60. The method of claim 59, wherein the mutated genes comprise a combination selected from the group consisting of: (i) MA del/TMf del; (ii) MA del/V3/4 del; (iii) MA del/Vif del; and (iv) ENV del/IN del.

61. A host cell transfected with a nucleic acid molecule prepared by the method of claim 51.

62. A strain of feline immunodeficiency virus, having ATCC accession No. VR-2619, and progeny virus prepared therefrom.

63. A plasmid designated as pFIV-141-B1, and having ATCC accession No. 203001.

64. A method of inducing the production of antibodies to FIV-141 in an animal, comprising administering to the animal: (a) a substantially purified FIV-141 virus; (b) a host cell infected with the FIV-141 virus; (c) a nucleic acid molecule having a nucleotide sequence corresponding to SEQ ID NO:1; (d) a host cell transfected with a nucleic acid molecule having a nucleotide sequence corresponding to SEQ ID NO:1; (e) an attenuated FIV-141 virus; (f) a host cell infected with an attenuated FIV-141 virus; (g) a nucleic acid molecule encoding an attenuated FIV-141 virus; or (h) a host cell transfected with a nucleic acid molecule encoding an attenuated FIV-141 virus.

65. A method of inducing the production of antibodies to a lentivirus, comprising administering to a mammal: (a) an attenuated lentivirus; (b) a host cell infected with an attenuated lentivirus; or (c) a nucleic acid molecule encoding an attenuated lentivirus.

66. The method of claim 64 or 65, further comprising purifying the antibody from the animal.

67. An antibody produced by the method of claim 66.

68. A method of inducing an immune response in a cat, comprising administering the vaccine of claim 4, 9, 20, 21, 32, 34 or 35 to said cat at a dosage sufficient to induce protective immunity against subsequent infection with FIV-141.

69. A method of treating a mammal for lentivirus infection, comprising administering the antibody of claim 67 to said mammal at a dosage sufficient to reduce one or more symptoms associated with said infection.

70. A method of inducing an immune response in a mammal, comprising administering the vaccine of claim 48, 49 or 50 to said mammal at a dosage sufficient to induce protective immunity against subsequent infection with at least one strain of said lentivirus.

71. The method of claim 70, wherein said mammal is a cat, said lentivirus is a strain of FIV and said vaccine is administered at a dosage sufficient to induce protective immunity against subsequent infection by at least one strain of FIV.